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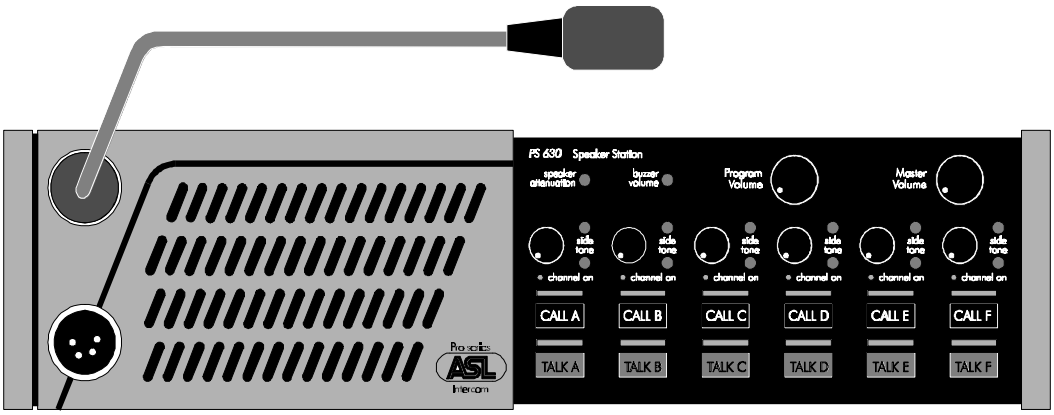
PRO SERIES

USER MANUAL

FOR THE

PS 630

SIX CHANNEL SPEAKER STATION



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1.0 GENERAL DESCRIPTION

The PS 630 is a six channel speaker station designed for use in both portable and fixed intercom systems. It incorporates a loudspeaker and a gooseneck microphone and provides full duplex communications within an ASL intercom system. The PS 630 RM model has a small built-in electret microphone.

Each channel has a Volume (listen level) control, a Talk and Call button with LED indicators, channel on/off switch and a two-stage sidetone trimmer. A master volume controls the total speaker/headset volume.

The unit is equiped with a limiter for the gooseneck microphone, allowing the user to speak close into the microphone without giving rise to overload and distortion. Loudspeaker dimming is automatic when the microphone is active. Private conversation may be carried out via the headset connector with a headset or telephone handset. When a headset is connected, both gooseneck microphone and speaker are disabled automatically.

As an option, a XLR-6 headset connector can be fitted for binaural use of the headset. By setting internally mounted jumpers, each of the 6 channels can be assigned to either the left or the right headset can, or to both headset cans.

An electronically balanced input allows volume controlled monitoring of an audio signal. This is for local use only, it will not appear on the intercomlines.

Special attention has been paid to the intelligibility of speech. By applying low noise/high speed opamps, a speech presence filter and a specially developed high power bridged headphone amplifier, communication is very comfortable even in environments with high background noise level. There is a separate amplifier for the loudspeaker.

The unique ASL CALL system provides both a flashing red LED and a very distinctive and characteristic sound signal. Smooth operation is guaranteed with the CALL button. Only a slight touch makes the red LED flash, whilst holding the button for two seconds will activate the CALL sound signal. The volume of the sound signal (buzzer) can be adjusted at the front panel.

The preamplified microphone signal is electronically balanced available at a 3 pin male XLR. This signal can be sent to paging systems.

Fully electronic switching increases reliability and allows for :

- 'soft' microphone ON switching, latched or momentary
- remote Mic Mute facility.
- automatic speaker attenuation (adjustable), when the microphone is activated.

2.0 UNPACKING

The shipping carton contains the parts listed below:

* The PS 630
* User manual
* 19" rackmount flares

If any are missing, contact your dealer.

ASL has taken great care to ensure this product reaches you in flawless condition.

After unpacking the unit please inspect for any physical damage to the unit, and retain the shipping carton and relevant packing materials for use should the unit need returning.

If any damage has occured, please notify your dealer immediately so that a written claim can be initiated. Please also refer to the guarantee section of this manual.

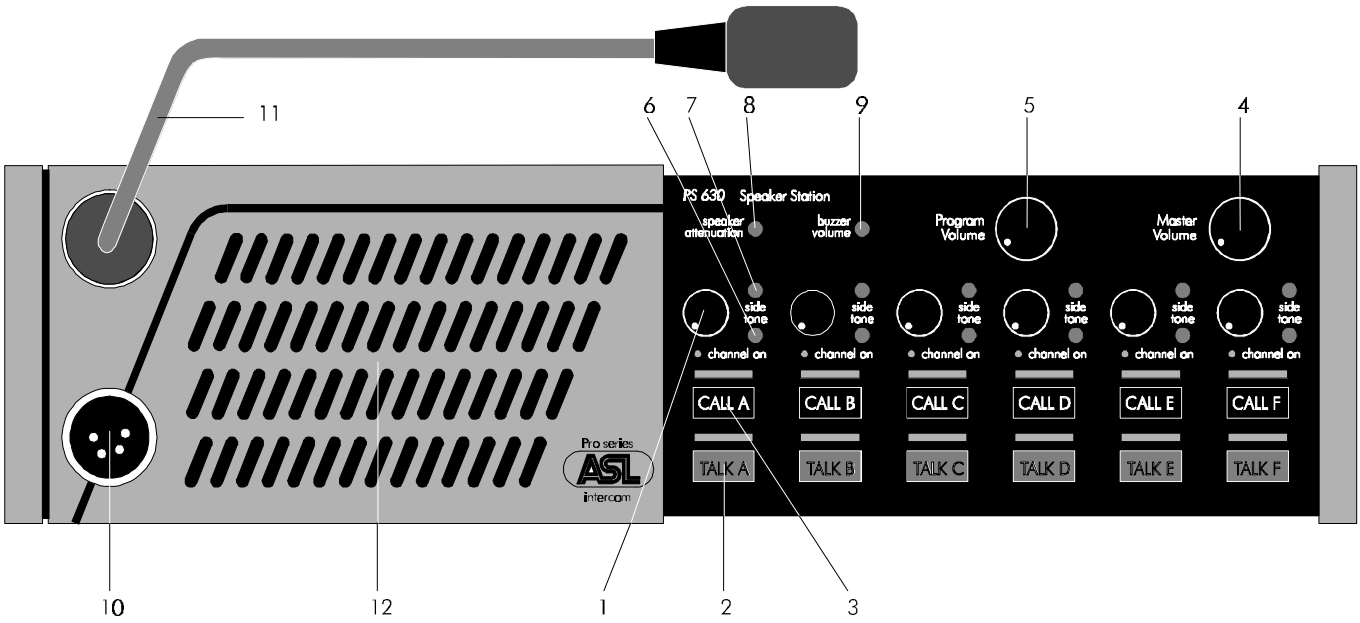
3.0 INSTALLATION

This PS 630 will form part of an existing or new intercom system, and connection to it is straightforward. There are no separate power connections or batteries to install, as the necessary DC voltages are derived from the intercom master station or power supply, via the intercom connection cable.

To connect the PS 630 onto the intercom system, use professional flexible microphone cable with 2 wires and 1 shield only. Connect the system intercom cables into the LINE connector sockets on the rear panel. Finally, when private conversation is desired, connect the listening headset plug into the HEADSET connector on the front panel.

The PS 630 is fully protected against mis wiring (reverse power) or short circuit in the interconnect cables.

A special kit is included for mounting the PS 630 in a 19" rack, taking 2U of rackspace.



4.0 FRONT PANEL CONTROLS & CONNECTOR

1 LISTEN LEVEL control knobs
These knobs preset the listen level for each channel separately.

2 TALK buttons
These buttons allow you to talk to each channel separately or simultaneously.
Any Talk button activates the gooseneck or headset microphone, the large green LED at each channel indicates if the microphone is switched on to that channel.

Latched switching:
When a TALK button is pressed quickly, the microphone will be switched on, and is electronically latched. When pressed again, the microphone will be switched off.

When the microphone is latched on, it can be muted by a mic mute from a PRO Series master station or power supply.

Momentary switching:
When a TALK button is pressed and held, the microphone will be switched on, and when released, will be switched off.

3 CALL buttons
These push buttons activate the call system, for each channel separately.
A momentary push will send a call signal to all stations connected to the intercom channel and the call LEDS will start flashing.
Press and hold the button for 2 seconds will activate the call buzzer, if not muted.
After the CALL button is released the LEDS will continue to flash for further 2 seconds.

4 MASTER VOLUME
This knob adjusts the volume of the speaker or headset.

5 PGM VOLUME
This knob adjusts the volume of the PGM input.
Depending in the setting of the internal jumpers the PGM volume is also controlled by the master volume knob.

6 SIDETONE LEVEL trimmers
These trimmers (one for each channel) control the level of your own voice as you hear it in the speaker or headset. It prevents the speaker from feeding back into the gooseneck microphone.

Adjustment procedure for all sidetone trimmers:
- **set trimmer in start position : fully clockwise.**
- **switch off the microphone of all connected (speaker!) stations.**
- **switch on the microphone of the PS 630.**
- **turn up volume.**
- **speak into the headset microphone.**
- **adjust the listen level by turning the sidetone trimmers.**

The operating area is between fully clockwise and minimum level.
Adjusting the sidetone does not affect the level of your voice as it is heard by other stations.

7 SIDETONE HI trimmers
These trimmers (one for each channel) control the

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rejection in the high frequency range. It compensates the capacity of the interconnecting cables. It prevents the speaker from feeding back into the gooseneck microphone (unit feedback).

4.0 FRONT PANEL CONTROLS & CONNECTOR continued

8 SPEAKER ATTENUATOR trimmer
This trimmer allows you to dim the speaker automatically, when the gooseneck microphone is switched on. It prevents:
- unit feedback if sidetone rejection is not sufficient.
- system feedback or a 'hollow' sound when the gooseneck microphones of other speaker stations on the same channel are activated simultaneously.

Adjustment procedure :
- switch off TALK buttons.
- inject an audio signal on the selected intercom channel.
- turn up volume.
- activate microphone and adjust the desired amount of attenuation.

The speaker attenuator has no effect when a headset is used.

9 BUZZER VOLUME trimmer
This trimmer adjusts the volume of the internal buzzer, which is located behind the front panel. The buzzer is activated if you press the CALL button of the PS 630 or a CALL button of any other station (on the channel to which the PS 630 is connected), longer than 2 seconds and the buzzers are not muted (on the master station or power supply).

10 HEADSET connector
A XLR-4 type connector for the connection of a local headset when private conversation is desired. These must have a can impedance of 200 ohms (or greater), or each minimum 400 ohm when in parallel.
The headset microphone may be of the dynamic or electret type

Pin assignments :
1. Shield mic. (GND)
2. mic. +
3. phones +
4. phones -

When connecting a headset, speaker and gooseneck microphone will be disabled automatically.
The PS 630 can optionally be equiped with a XLR-6 headset connector for binaural use.
Jumpers on the front PCB board inside determine the destination of the listen signals on the headset.
Each listen signal of the six channels can independantly be placed:
- on the left or right can.

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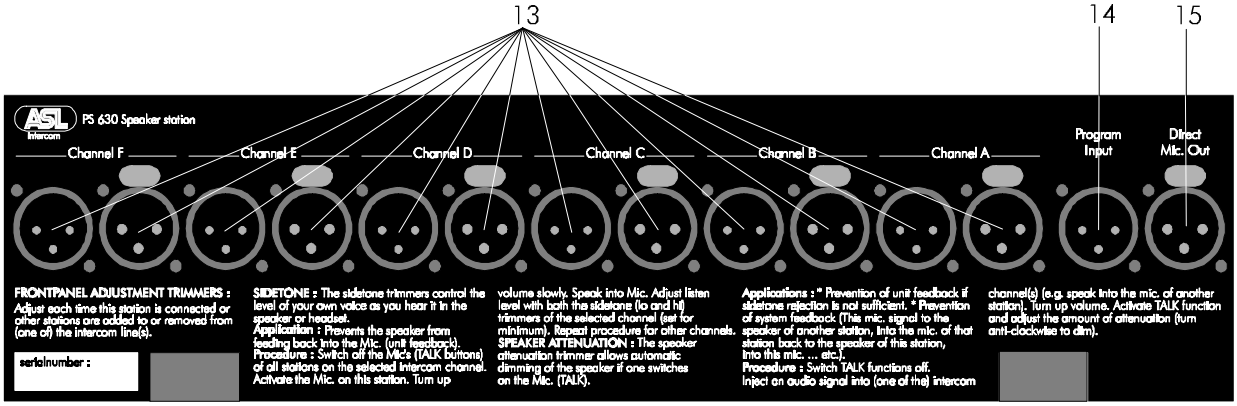
- on the left or right can.
- on both cans.

11 GOOSENECK MICROPHONE
A high quality electret noise canceling microphone.
A limiter prevents the mic pre-amp from clipping when speaking close in the microphone. The microphone is automatically disabled when a headset is used.

12 LOUDSPEAKER
A high quality loudspeaker driven by a 1.3 Watt amplifier.
The speaker is automatically disabled when a headset is used.

5.0 REAR PANEL CONTROLS & CONNECTOR


13
14
15
PS 630 Speaker station
Channel F
Channel E
Channel D
Channel C
Channel B
Channel A
Program Input
Direct Mic. Out
FRONTPANEL ADJUSTMENT TRIMMERS : Adjust each time this station is connected or other stations are added to or removed from (one of) the intercom line(s).
serialnumber :
SIDETONE : The sidetone trimmers control the level of your own voice as you hear it in the speaker or headset.
Application : Prevents the speaker from feeding back into the Mic. (unit feedback).
Procedure : Switch off the Mic's (TALK buttons) of all stations on the selected intercom channel. Activate the Mic. on this station. Turn up
volume slowly. Speak into Mic. Adjust listen level with both the sidetone (lo and hi) trimmers of the selected channel (set for minimum). Repeat procedure for other channels.
SPEAKER ATTENUATION : The speaker attenuation trimmer allows automatic dimming of the speaker if one switches on the Mic. (TALK).
Applications : * Prevention of unit feedback if sidetone rejection is not sufficient. * Prevention of system feedback (This mic. signal to the speaker of another station, into the mic. of that station back to the speaker of this station, into this mic. ... etc.).
Procedure : Switch TALK functions off. Inject an audio signal into (one of the) intercom
channel(s) (e.g. speak into the mic. of another station). Turn up volume. Activate TALK function and adjust the amount of attenuation (turn anti-clockwise to dim).

13 LINE conectors for channel A thru F
These twelve XLR-3 connectors are for connecting the PS 630 to the intercom system. Each channel has it's own XLR-3 female connector (input) and XLR-3 male connector (link).

14 PROGRAM INPUT connector
This input is electronically balanced and accepts line
level signals.

15 DIRECT MIC OUT connector
This connector outputs the pre-amplified microphone
signal. It is electronically balanced.

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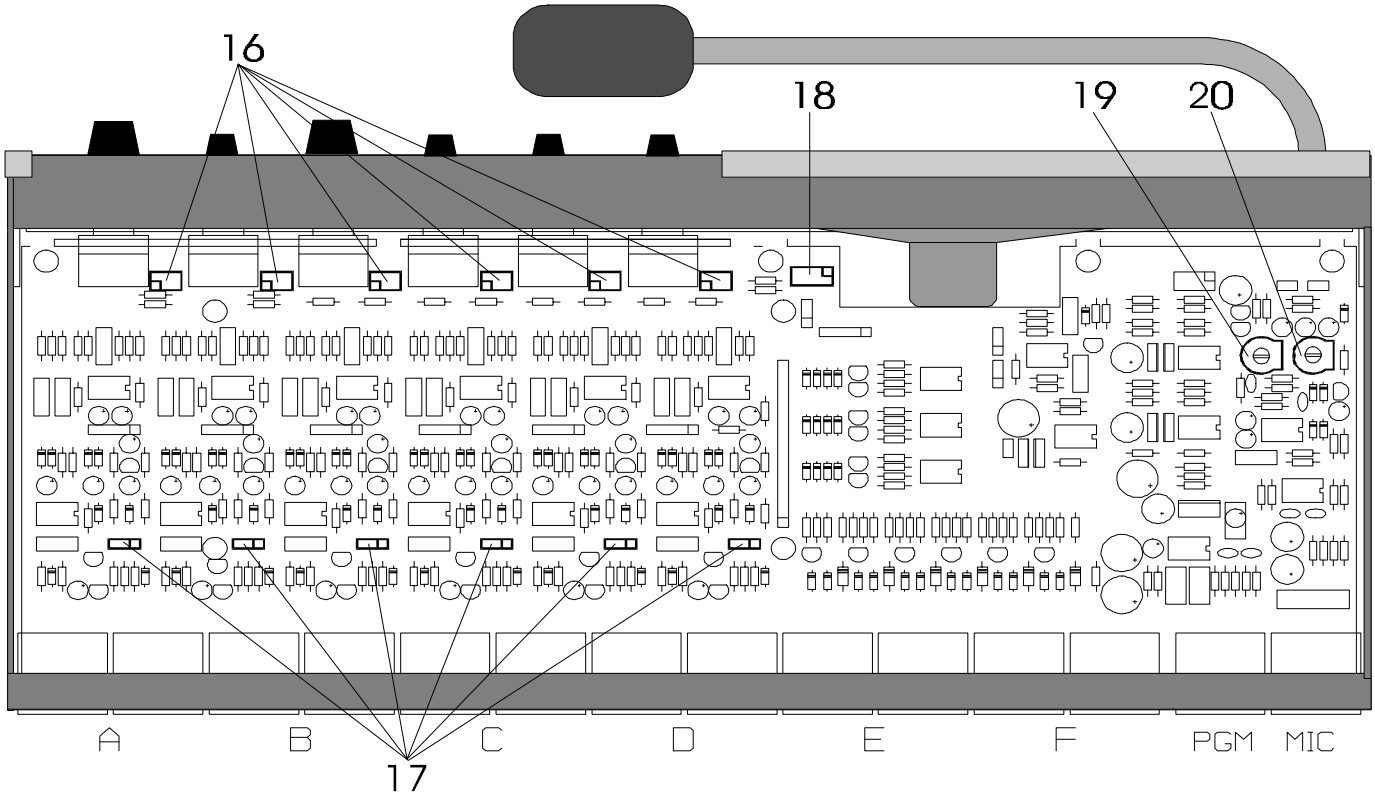
6.0 INTERNAL CONTROLS

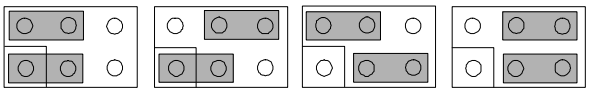


Inside the unit there are severalcontrol that can be adjusted. These internal controls are located on the main PC board.

16 BINAURAL JUMPER SETTING

For each channel separately, these jumpers determine

how the audio of that channel can be heard in case



of binaural use.

17 CALL RECEIVE OPTION

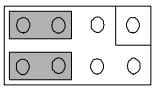
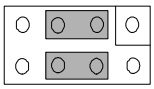
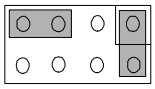
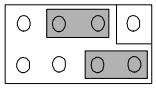
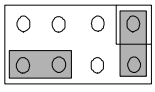
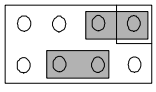
For each channel separately, these jumpers enable

Call receive enabled when channel off

Call receive disabled when channel off

the receiption of a CALL signal when the channel is switched off.

18 PGM ROUTING JUMPERS

PGM mode	PGM Independant from master volume	PGM followed by master volume
PGM to left & right		
PGM to left only		
PGM to right only		

With these two jumpers you can determine, for binaural applications, how the PGM signal is controlled

and where it is to be send to.

19 HEADSET MIC GAIN

This trimmer controls the gain of the headset

microphone.

20 GOOSENECK MIC GAIN
This trimmer controls the gain of the gooseneck microphone.

7.0 CABLING

For the PRO Series Intercom system the interconnecting cables are of the shielded two-conductor microphone cable type and the intercom line connectors are of the XLR-3 type. Audio and Call signals are on XLR pin 3, DC power is on XLR pin 2. XLR pin 1 is connected to the shield of the cable which functions as the common return for audio and power.

Since the audio signal is transferred in an unbalanced way, certain rules have to be obeyed when installing the cables of an intercom network. This is to avoid earth loops and to minimize power loss and the possible effect of electromagnetic fields.

These rules are:

- Use high quality (multipair) cable.
  For interconnecting user stations, power supplies and accessories in an ASL Intercom network, use high quality shielded two-conductor (minimum 2x 0.30 mm2) microphone cable only.
  In case of a multi channel intercom network, use high quality microphone 'multipair' cable only, each pair consisting of two conductors (minimum 2x 0.15 mm2) with separate shield. Multipair cable should also have an overall shield.

- Use flexible cables.
  Use flexible single and multipair microphone cable instead of cable with solid cores, especially when the cable is subjected to bending during operation or installation.

- Separate cable screen to XLR pin 1.
  The screen of each separate microphone cable and/or the screen of each single pair in a multipair cable, should be connected to pin 1 of each XLR-3 connector. Do not connect this cable screen to the metal housing of the connector or to metal wall boxes (outlets).
  See page 10 for Earthing Concept.

- Cable trunks, connection boxes and overall multipair cable screen to clean earth.
  Metal cable trunks, metal connection boxes and overall multipair cable screen should be inter-connected and, at one point (the 'central earthing point') in the intercom network only, be connected to a clean earth or a safety earth.
  See page 10 for Earthing Concept.

- Keep metal connection boxes and cable trunks isolated from other metal parts.
  Metal housings for intercom cables and connectors should be mounted in such a way that they are isolated from other metal cable and connector housings and from any other metal construction parts.

- See Party Line, Technical Concept

- Keep cables parallel as much as possible.
  When two (multi channel) units in a network are connected by more than one cable, make sure that these cables are parallel to each other over the whole distance between those units. When using multipair cable, parallelism is ensured in the best possible way.

- Avoid closed loops.
  Always avoid that cables are making a loop. So-called 'ring intercom' should not physically be cabled as a ring. All cable routes should have a 'star' configuration, with the central earthing point (usually close to the power supply position) as the centre of the star.

- Keep cables away from electromagnetic sources.
  Keep intercom cables away from high energy cables, e.g. 110/220/380V mains power or dimmer controlled feeds for spotlights.
  Intercom cables should cross with energy cables at an angle of 90 degrees only.
  Intercom cables should never be in the same trunking as energy cables.

- **Place power supply in a central position.**
  In order to avoid unacceptable power losses, place the power supply as close as possible to where most power consumption occurs or, in other words, most user stations are placed.

- **Connect ASL power supply to a 'clean' mains outlet.**
  The ASL power supply may be connected to the mains power outlet to which other audio equipment is connected. Avoid using mains outlets which also power dimmer controlled lighting systems.

In case of more complex installations, don't hesitate to contact us. Please send us a block diagram of the planned network with a list of all user stations and their positions, and we are happy to advise you on cabling lay out.

8.0 PARTY LINE, TECHNICAL CONCEPT

ASL's PRO Series offers a complete two way ('full duplex') communications system.
Users of the system are connected via a 'party line'. Master stations (with built-in power supply), beltpacks, speaker stations and power supplies are interconnected via standard microphone cable. One wire is used as an audio line, one as a power line and the screen of the cable functions as earth/return.

Current drive is used for signal transfer. Each station utilises a current amplifier to amplify the microphone signal and place it on the common audio line where, due to the constant line impedance (situated in the power supply between XLR pin 3 and 1), a signal voltage is developed which can be further amplified and sent to headphones or loudspeakers.

This principle has three advantages:
- the use of a single audio line allows several stations to talk and listen simultaneously.
- due to the high bridging impedance offered by each station, the number of stations 'on line' has no influence on the level of the communications signal.
- power and audio to the intercom stations use the same cable.

The Call signal is also sent as a current on the audio line. It develops a DC potential over the line impedance which will be sensed by each station and interpreted as a Call signal.

9.0 GUARANTEE

This unit is warranted by ASL Intercom to the original end-user purchaser against defects in workmanship and materials in it's manufacture for a period of one year from date of shipment to the end-user.

Faults arising from misuse, unauthorised modifications or accidents are not covered by this warranty. If the unit is faulty it should be sent in it's original packing, to the supplier or your local ASL dealer, with shipping prepaid. A note must be included stating the faults found and a copy of the original suppliers invoice.

THIS PRODUCT WAS DESIGNED, DEVELOPED AND MANUFACTURED BY:

ASL-intercom
MAARSSEN (UTRECHT) HOLLAND.
E-mail : info@asl-inter.com
Website : http://www.asl-inter.com

10.0 TECHNICAL SPECIFICATIONS PS 630

POWER CONSUMPTION

current (at 30 V DC)	105 mA quiescent
	140 mA signalling
	280 mA at max. output + signalling

MIC. PREAMP

gooseneck microphone type	noise cancelling electret
headset mic. impedance	200 ohms
gain	40 dB - 70 dB (adjustable internally)
presence filter	+6 dB at 5 kHz
frequency response	200 Hz - 13 kHz (-3 dB)
V electret mic	+9 V DC

HEADPHONES DRIVER AMP

max. load	200 ohms
max. output level	normal 14 V rms (200 ohms)
	binaural 8 V rms (400 ohms)
max. output power	normal 0.5 W rms (each can)
	binaural 0.16 W rms (each can)

SPEAKER DRIVER AMP

speaker impedance	50 ohms
max. output power	1.3 W rms

INTERCOM LINE DRIVER

max. output current	3 mA rms
output impedance	> 150 Kohms

SIDETONE

rejection	0 - 30dB adjustable

BUZZER

max. SPL	100 dBA

DIMENSIONS AND WEIGHT

width	337 mm
height	87 mm
depth	155 mm
weight	2.94 Kg

GENERAL SYSTEM SPECIFICATIONS

intercom line impedance	350 ohms (1kHz)
	2.2 Kohms (DC)
intercom line audio level	nom. -18 dBu
	max. +4 dBu
dynamic range	80 dB
call send signal	+2.8 mA
call receive signal threshold	+2.4 V DC
supply voltage	+30 V DC (12 V to 32 V)
mic mute power interrupt time	0.1 sec

Note: 0 dBu = 775 mV into open circuit
ASL reserve the right to alter specifications without further notice.

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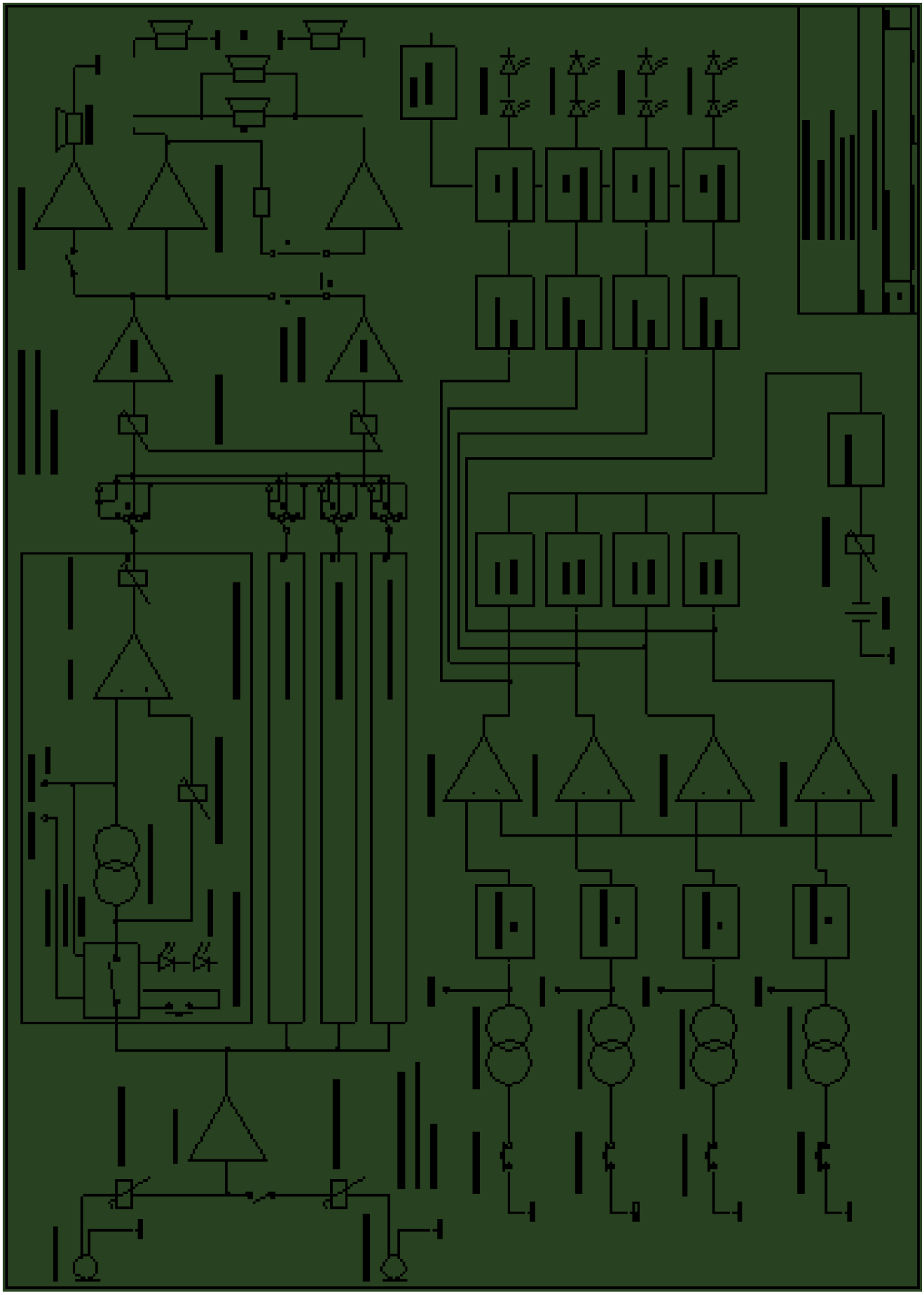

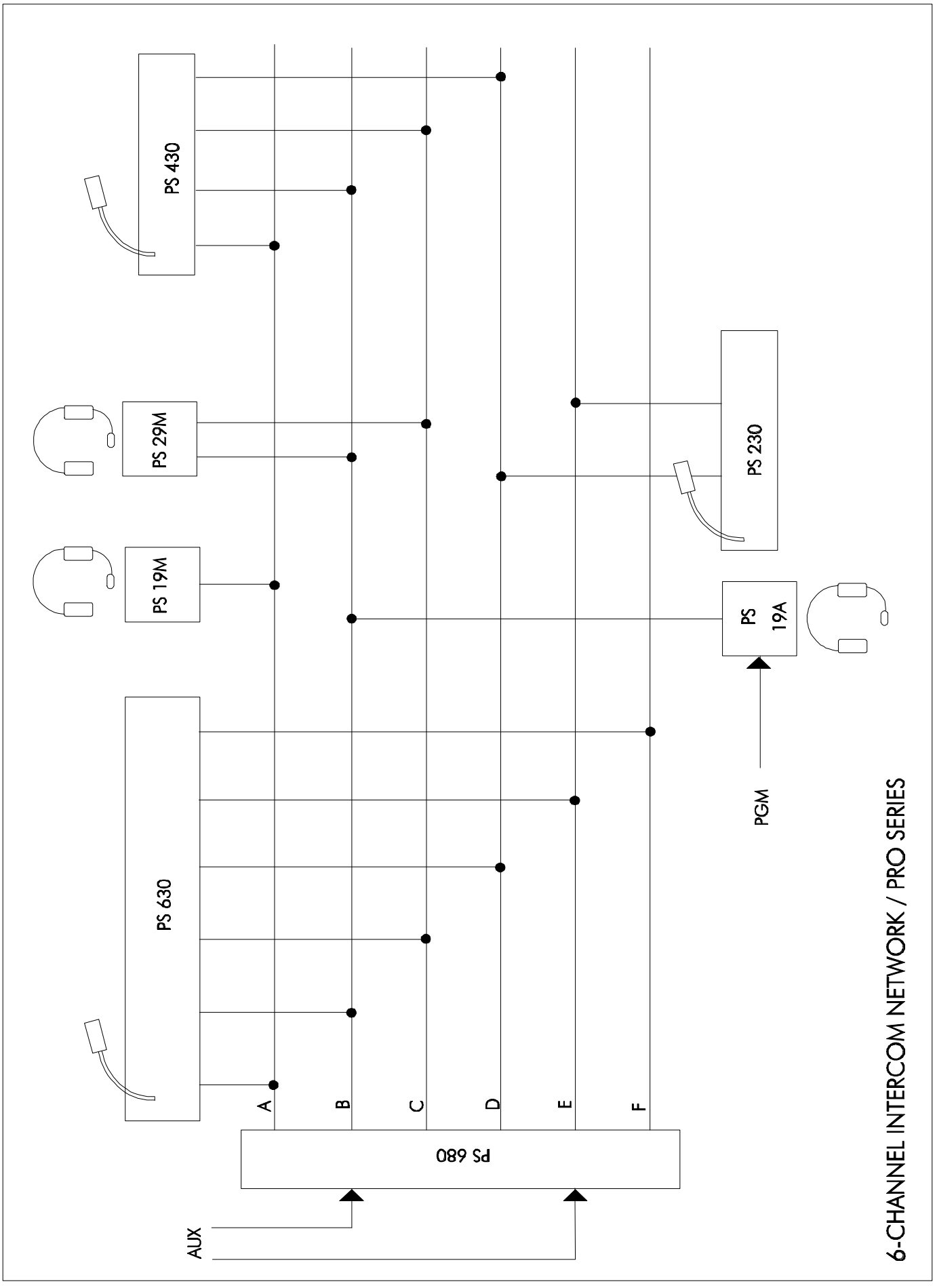
6-CHANNEL INTERCOM NETWORK / PRO SERIES
PS 430
PS 29M
PS 19M
PS 630
PS 230
PS 19A
PS 680
PGM
AUX
A
B
C
D
E
F